Homework 3

CMSY-199, Fall 2011

The source code and sample output for this assignment must be submitted electronically using the Canvas course website prior to the start of class on Monday, October 17.

1. Write a Java application called `Poker` which uses the `Card` (Fig. 7.9) and `DeckOfCards` (Fig. 7.10) classes to create a deck of cards, shuffle the deck, and deal a five-card poker hand. Add the methods `getFace` and `getSuit` to the `Card` class.

2. Write a class called `Hand` which encapsulates the attributes and operations of a five-card poker hand including methods to `show` the contents of the hand and determine whether the `result` of the hand is a

   (a) royal flush
   (b) straight flush
   (c) four of a kind
   (d) full house
   (e) flush
   (f) straight
   (g) three of a kind
   (h) two pair
   (i) pair
   (j) nothing

3. Modify the `Poker` application to deal 2,598,960 consecutive poker hands, keep a `count` of each of the ten possible results, and print a summary table of the results. The expected frequency of each result is shown in the table below.

Result	**Expected Frequency**
Royal Flush	4
Straight Flush	36
Four of a Kind	624
Full House	3,744
Flush	5,108
Straight	10,200
Three of a Kind	54,912
Two Pair	123,552
Pair	1,098,240
Nothing	1,302,540